

Infrastructure as Code



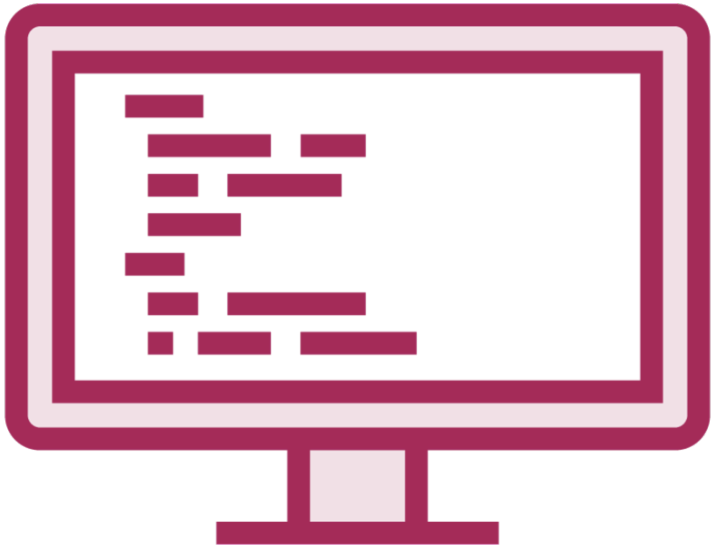
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ARM Templates



Infrastructure defined as code

Resource consistency

Lowers administrative effort

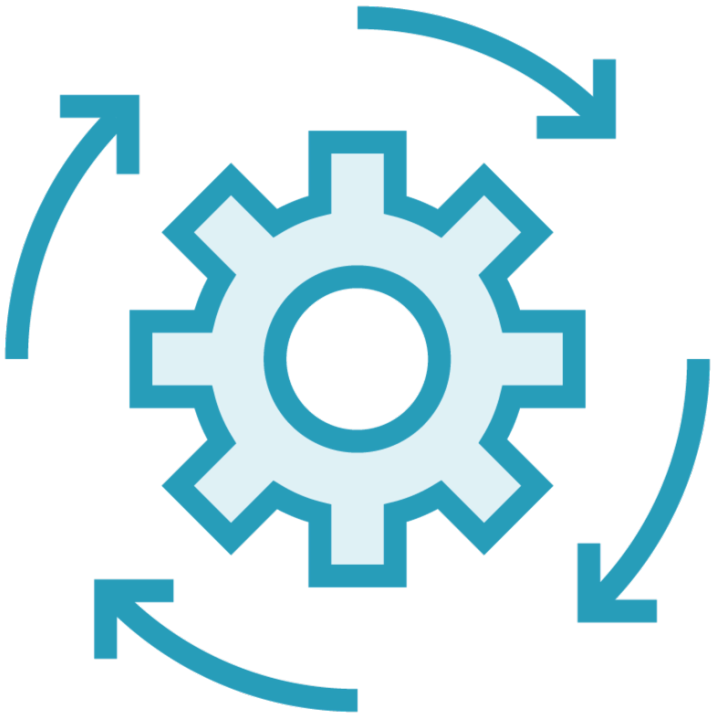


Schema

```
{
  "resources" : [
    {
      "name": "[variables('dbserver')]",
      "apiVersion" : "2014-04-01-preview",
      "type" : "Microsoft.Sql/servers",
      "location" : "[resourceGroups().location]",
      "properties" : {
        "administratorLogin" : "[parameters('adminLogin')]",
        "administratorLoginPassword" : "[parameters('adminPass')]"
      },
    },
    "resources" : [
      {
        "name": "[parameters('db')]",
        "apiVersion": "2014-04-01-preview",
        "type": "databases",
        "location": "[resourceGroup().location]",
        "dependsOn": [
          "variables('dbserver')]"
        ],
        "properties" : {
          "editing" : "[parameters('edition')]",
          "collation" : "[parameters('collation')]"
        }
      }
    ]
  }
}
```



Deployment Modes



Complete
Incremental

Complex ARM Deployments

**One template
calling another**

Nested vs Linked

**Must use
incremental mode**



Nested Templates

```
    "template" : {
      "$schema": https://xxxxxx/2019-04-01/deploymentTemplate.json#,
      "contentVersion": "1.0.0.0",
      "resources": [
        {
          "type": "Microsoft.Storage/storageAccounts",
          "apiVersion": "2019-04-01",
          "name": "[parameters('storageAccountName')]",
          "location": "West US",
          "sku": {
            "name": "Standard_LRS"
          }
          "kind": "StorageV2"
        }
      ]
    }
  }
```



Linked Templates

```
"templateLink" : {  
  "uri":https://xxxxx/newStorageAccount.json,  
  "contentVersion": "1.0.0.0"  
}
```



ARM Templates and Azure Pipelines



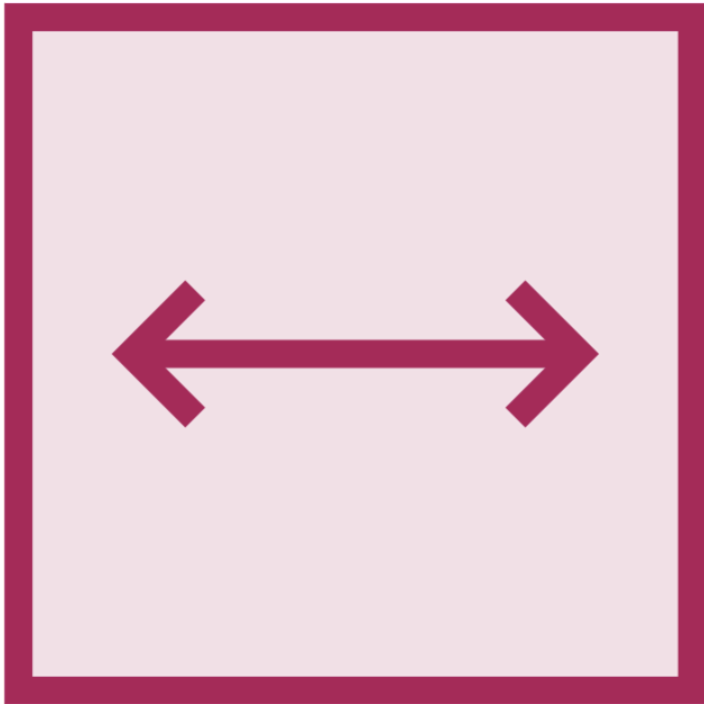
The ARM template deployment task

Azure PowerShell

Copy and deploy tasks



Service Connections in Azure Pipelines

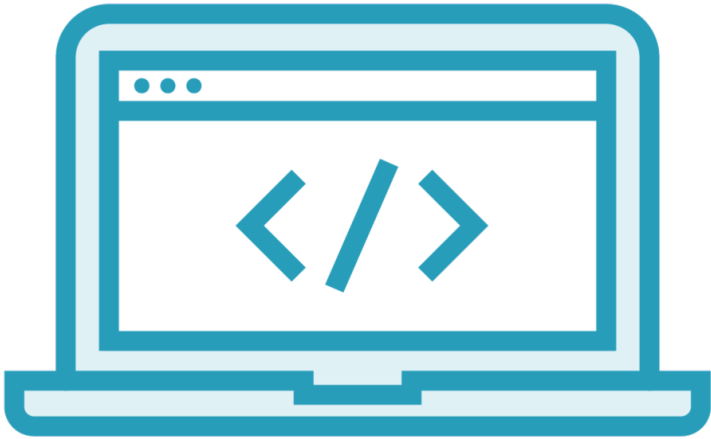


Authorizes Pipelines to access an Azure resource

Defined at the project level



Building Infrastructure with PowerShell



PowerShell -ne 'Infrastructure as Code'

Using Azure PowerShell cmdlets

Understanding the Custom Script extension



Custom Script Extension



Downloads and runs scripts on Azure VMs

**Executable via ARM templates,
Azure PowerShell and other tools**

Great for post-deployment tasks



Terraform



Sort of like ARM templates

Less verbose than ARM templates

Init —> Plan —> Apply



A Terraform Plan

Providers

Variables

Resources

Output values





Focus Here

Know the basics

ARM templates

< ~2% questions

